

Remarks

The following remarks are submitted to be fully responsive to the Official Action dated May 15, 2003. It is further submitted that this response is timely filed within the three-month shortened statutory period. Accordingly, no fee is believed necessary. Should any fee be required, the Commissioner is authorized to charge Kagan Binder Deposit Account No. 50-1775 and thereafter notify us of the same. Reconsideration of all outstanding grounds of the rejection and allowance of the subject application are believed in order and respectfully requested.

The Examiner's indication of allowable subject matter within dependent claims 9 and 10 is noted with appreciation. Claims 9 and 10 are objected to as being dependent upon a rejected base claim (claim 1) but would be allowable if appropriately rewritten as indicated by the Examiner. As presented below, independent claim 1 is amended to emphasize certain aspects of the present invention believed to be allowable. Thus, independent claim 1 is now believed to be in a condition for allowance. As such, it is submitted that the objection to claims 9 and 10 is overcome and withdrawal of the rejection is respectfully requested.

By this amendment, independent claims 1, 15, and 16 are amended to include certain features believed allowable. Support for this amendment can be found in the specification at page 7, lines 10-30. Thus, independent claims 1, 15, and 16 are amended to emphasize distinct features of the regulating portion of the valve of the present invention as having the ability to provide balanced fluid flow through the valve. In particular, these claims are amended to emphasize that the channels of the regulating portion are formed such that, at each cross-section location of the stroke of the regulating portion, the open area cross-sections of the channels in the regulating portion are symmetrically arranged to provide balanced fluid flow through the valve. Applicants respectfully submit that this is distinct from the prior art as set forth below.

Claims 1-8, 12 and 15-16 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 2,541,176 to Rockwell.

The Rockwell reference is directed to a control valve. As can be seen in Fig. 1, the Rockwell valve has a valve body 11 and a plug 50 attached to an actuating device. The plug 50 controls flow of fluid from chamber 43 to chamber 44 by regulating flow through port 48. The plug 50 includes three recesses identified as A, B, and C and shown in Figs. 4-6 that control the flow of fluid through the valve. Cross-sections of the plug 50 and the open areas of the recesses A, B, and C at various operating positions are shown in Figs. 10-12. In the position shown in Fig. 10 recess C alone provides flow through the valve. As can be seen, flow through the valve would not be balanced with respect to the plug 50 in this position. That is, there is no opening symmetrically positioned with respect to recess C to provide balanced flow. As the valve is further opened, as shown in Fig. 11, the cross-section of C increases and recess B begins to contribute to flow through the valve. Again, at this position of the plug 50, flow through the valve would not be balanced.

Independent claims 1, 15, and 16 now recite that the open area cross-sections of the channels in the regulating portion are symmetrically arranged to provide balanced fluid flow through the valve. Applicants respectfully submit that the non-symmetrical arrangement of the recesses of Rockwell throughout the stroke of the plug 50 is distinct from the symmetrically arranged channels of the present invention. As such, applicants submit that claims 1, 15, and 16 are patentably distinct from Rockwell. Withdrawal of the rejection of claims 1, 15, and 16 is thus believed proper and respectfully requested.

By this amendment dependent claims 6 and 8 are cancelled and the rejection of claims 6 and 8 is thus moot. Also, applicants respectfully submit that dependent claims 2-5, 7, and 12, which depend from claim 1, are allowable over the prior art of record at least in that they depend from independent claim 1. Withdrawal of the rejection of these claims is believed proper and respectfully requested.

Claims 11 and 13 have been rejected under 35 U.S.C. §103 as being unpatentable over Rockwell in view of U.S. Patent No. 6,293,514 to Pechoux et al.

As noted above, the present claims relate to a valve, which includes open area cross-sections of the channels in the regulating portion that are symmetrically arranged to

provide balanced fluid flow through the valve. Symmetry is important because it can control offset pressures as fluid flows through the valve, which thereby controls undesirable sideways displacement of the valve in the valve seat. Such displacement may potentially interfere with free movement of the valve through the valve body passage and may cause unwanted hammering or chattering to the valve that may affect fluid flow. Additionally, if the regulating portion of the valve is subjected to friction with the valve body passage during use (such as be sideways displacement of the valve), damage to the valve may occur. Such damage may introduce undesired fine particles into the fluid flowing through the valve body, or alternatively may lead to failure of the valve. See the present specification at page 7, lines 22-30.

Pechoux et al. is cited to show a solenoid actuator and a bellows to seal the actuator. Pechoux et al. does not cure the deficiency of Rockwell with respect to the symmetry feature now recited in the presently amended claims. That is, Pechoux et al. does not teach any such feature and does not suggest any reason to modify Rockwell in such a manner. Withdrawal of the rejection of record based upon Rockwell, in combination with Pechoux et al. is thus believed proper and respectfully requested.

Claim 14 has been rejected under 35 USC § 103 as being unpatentable over Rockwell in view of U.S. Patent No. 6,000,416 to Kingsford et al.

Kingsford et al. is cited to show that valves of fluoropolymer are known where a corrosive fluid is valved or high purity of the fluid must be maintained. Kingsford et al. does not cure the deficiency of Rockwell with respect to the symmetry feature now recited in the presently amended claims. Kingsford et al. does not teach any such feature and does not suggest any reason to modify Rockwell in such a manner. Withdrawal of the rejection of record based upon Rockwell, in combination with Kingsford et al. is thus believed proper and respectfully requested.

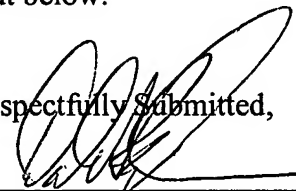
In view of the above remarks, it is respectfully submitted that the claims and the present application are now in condition for allowance, which allowance is earnestly solicited. In the event that a phone conference between the Examiner and the Applicant's

undersigned attorney would help resolve any remaining issues in the application, the Examiner is invited to contact the undersigned as set out below.

Dated: August 13, 2003

By:

Respectfully Submitted,


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